

- 2025 RELEASE UNDER E.O. 14176
1. An apparatus for the meaningful suppression of the growth potential of a pathogen *in-vivo*, said apparatus comprising an electromagnetic radiation source capable of providing broad-spectrum electromagnetic radiation, wherein said broad-spectrum electromagnetic radiation includes wavelengths of from about 190 nm to about 1200 nm, said broad-spectrum electromagnetic radiation having an intensity sufficient to achieve meaningful suppression in said growth potential of said pathogen *in-vivo* and wherein at least part of said apparatus is adapted for placement proximate to the *in-vivo* location of said pathogen.
 2. The apparatus according to Claim 1 wherein said electromagnetic radiation is a pulsed broad-spectrum electromagnetic radiation and said electromagnetic radiation is pulsed from about 1 to about 1000 times and for a duration of each pulse from about 1 microsecond to about 500 milliseconds.
 3. The apparatus according to Claim 1 wherein said electromagnetic radiation source is selected from the group consisting of halogen lamps, xenon lamps, halogen enhanced UV lamps, xenon flash lamps, mercury xenon lamps, deuterium lamps, vacuum UV lamps, mercury lamps, lasers and combinations thereof.
 4. The apparatus according to Claim 1 wherein said broad-spectrum electromagnetic radiation is a continuous spectrum.
 5. The apparatus according to Claim 1 wherein said broad-spectrum electromagnetic radiation is a combination of at least two discrete spectra.
 6. The apparatus according to Claim 1 wherein said apparatus comprises a controller, said controller managing the duration and intensity of said electromagnetic radiation source.

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7. The apparatus according to Claim 1 wherein said apparatus achieves a meaningful suppression in the growth potential of said pathogen *in-vivo* by increasing the time for said pathogen to double in population.
 8. The apparatus according to Claim 1 wherein said apparatus achieves a meaningful suppression in the growth potential of said pathogen *in-vivo* by reducing the population of said pathogen *in-vivo* by at least about 1 log.
 9. The apparatus according to Claim 1 wherein said broad-spectrum electromagnetic radiation has an intensity from about 0.01 J/cm² to about 1 J/cm².
 10. A method for achieving the meaningful suppression of the growth potential of a pathogen in a living organism comprising applying a broad-spectrum electromagnetic radiation from an apparatus according to Claim 1 to said living organism at the locus of said pathogen in said living organism
 11. An apparatus for the treatment of acute otitis media in an animal comprising an electromagnetic radiation source capable of providing broad-spectrum electromagnetic radiation, wherein said broad-spectrum electromagnetic radiation has wavelengths of from about 190 nm to about 1200 nm, said broad-spectrum electromagnetic radiation having an intensity sufficient to achieve meaningful suppression in acute otitis media while minimizing erythema on the tympanic membrane of said animal; wherein at least part of said apparatus is adapted for placement proximate to said tympanic membrane of said animal.
 12. The apparatus according to Claim 11 wherein said electromagnetic radiation is a pulsed broad-spectrum electromagnetic radiation and said electromagnetic radiation is pulsed from about 1 to about 1000 times and for a duration of each pulse from about 1 microsecond to about 500 milliseconds.

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13. The apparatus according to Claim 11 wherein said apparatus achieves a meaningful suppression in the growth potential of said acute otitis media by increasing the time for the pathogen causing said acute otitis media to double in population.
 14. The apparatus according to Claim 11 wherein said apparatus achieves a meaningful suppression in the growth potential of said acute otitis media by reducing the population of the pathogen causing said acute otitis media by at least about 1 log.
 15. A method for achieving the meaningful suppression of the growth potential of a pathogen in a living organism, said method comprising administering a broad-spectrum electromagnetic radiation to said living organism to locus of said pathogen in said living organism, wherein said broad-spectrum electromagnetic radiation has wavelengths of from about 190 nm to about 1200 nm, said broad-spectrum electromagnetic radiation having an intensity sufficient to achieve meaningful suppression in the growth potential of said pathogen *in-vivo*.
 16. The method according to Claim 15 wherein said broad-spectrum electromagnetic radiation is a pulsed broad-spectrum electromagnetic radiation and said electromagnetic radiation is pulsed from about 1 to about 1000 times and for a duration of each pulse from about 1 microsecond to about 500 milliseconds.
 17. The method according to Claim 15 wherein said pathogen is selected from the group consisting of viruses, bacteria, pyrogens, toxins, fungi, protozoa, prions and combinations thereof.
 18. The method according to Claim 15 wherein said living organism is an animal.

19. The method according to Claim 15 wherein said method achieves a meaningful suppression in the growth potential of said pathogen *in-vivo* by increasing the time for said pathogen to double in population.
20. The method according to Claim 15 wherein said method achieves a meaningful suppression in the growth potential of said pathogen *in-vivo* by reducing the population of said pathogen *in-vivo* by at least about 1 log.

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